

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. – 25. (Cancelled)

26. (Previously Presented) An apparatus for injecting steam at a controlled flow rate into a geological formation, the apparatus comprising:

a flow path between a well surface and the formation, the flow path including at least one opening in a tubular, the opening permitting steam flow at a critical flow rate with an annulus/tubing pressure ratio of up to about 0.9 by using at least two apertures in the tubular and a throat and diffuser portion in the opening.

27. (Currently Amended) The apparatus of claim 26, further comprising an obstructing member disposed across from the opening ~~nozzle~~ which urges the steam along the flow path into the formation.

28.-32. (Cancelled)

33. (Previously Presented) An apparatus for injecting steam at a controlled rate into multiple zones of interest adjacent a wellbore, the apparatus comprising:

a tubular string for transporting steam into the wellbore from the surface of the well, wherein the tubular string includes a plurality of apertures; and

at least two nozzles disposed along the string, each nozzle located in a position of the wellbore adjacent a first zone of interest and a second zone of interest, the nozzles having a throat portion and a diffuser portion, wherein the steam at each zone of interest has a liquid/water ratio based on a configuration of the nozzle and the apertures in the tubular string.

34. (Original) The apparatus of claim 33, further including sealing means isolating an annular area above and below each nozzle, the annular area formed between the tubular and walls of the wellbore.

35. (Original) The apparatus of claim 33, further comprising an obstructing member disposed downstream from each nozzle, wherein the obstructing member hinders a portion of the fluid from flowing downstream in the preferential direction of each nozzle.

36. (Currently Amended) An apparatus for injecting steam into multiple wellbores from a single source of steam, the apparatus comprising:

a fluid path from the source of steam to each wellbore, wherein the fluid path includes a string of tubulars having at least two apertures; and

at least one nozzle disposed along the string of tubulars between the source and each wellbore, the at least one nozzle including a throat and a diffuser portion, wherein the nozzle and the apertures are configured such that a predetermined flow rate of steam is provided to each wellbore.

37. (Currently Amended) An apparatus for injecting steam from a source of steam to at least two wellbores, the apparatus comprising:

a flow path for the steam between the source of steam and the at least two wellbores, wherein the flow path includes a tubular string with a plurality of apertures; and

at least one nozzle disposed along the tubular string in the flow path, the nozzle and the apertures are configured for controlling a flow of steam using critical flow.

38. (Original) The apparatus of claim 37, wherein there are an equal number of nozzles and wellbores.

39. (Original) The apparatus of claim 37, wherein the at least one nozzle includes a throat portion and a diffuser portion.

40. – 46. (Cancelled)

47. (Previously Presented) An apparatus for injecting steam from a wellbore into a geological formation, the apparatus comprising:

a flow path between a well surface and the formation, the flow path including at least one nozzle, the at least one nozzle including a throat portion and a diffuser portion, whereby the steam will flow through the nozzle at a critical flow rate, wherein the critical flow rate is a controlled flow rate and the flow path includes a string of tubulars extending from the well surface to the formation, the at least one nozzle located in the string of tubulars, proximate the formation; and

at least one opening formed along the string of tubulars proximate the formation, the at least one nozzle connected to the at least one opening, wherein the at least one opening includes an enlarged area disposed circumferentially around the string of tubulars.

48. (Previously Presented) The apparatus of claim 47, wherein a portion of the string of tubulars within the enlarged area has apertures disposed therein which are circumferentially distributed around the string of tubulars.

49. (Previously Presented) The apparatus of claim 48, wherein the number of apertures in the tubular string is variable and selectable.

50. (Previously Presented) The apparatus of claim 49, further including an intermediate sleeve member disposable in the tubular string adjacent the apertures in the wall, the intermediate sleeve member having circumferentially distributed apertures alignable with the apertures in the wall.

51. (Previously Presented) The apparatus of claim 50, wherein the apertures in the sleeve are constructed and arranged to permit steam to pass from the tubing to the pocket while maintaining a predetermined ratio of water and vapor.

52. (Previously Presented) The apparatus of claim 47, wherein at least two enlarged areas are disposed along the tubular string.

53. (Previously Presented) The apparatus of claim 52, wherein an annular area is between each enlarged area and an adjacent formation is isolated with a packing member.

54. (Previously Presented) The apparatus of claim 47, wherein the nozzle is remotely removable.

55. (Previously Presented) The apparatus of claim 47, wherein the nozzle is remotely insertable.

56. (Previously Presented) The apparatus of claim 47, wherein the apparatus injects steam from a lateral wellbore into the formation.

57. (Previously Presented) The apparatus of claim 47, wherein the flow path further includes a fluid path formed in a wall of a casing lining the wellbore, the fluid path formed adjacent the formation.

58. (Previously Presented) The apparatus of claim 57, wherein the fluid path formed in the casing includes perforations.

59. (Previously Presented) An apparatus for injecting steam from a wellbore into a geological formation, the apparatus comprising:

a flow path between a well surface and the formation, the flow path including at least one nozzle, the at least one nozzle including a throat portion and a diffuser portion, whereby the steam will flow through the nozzle at a critical flow rate, wherein the critical flow rate is a controlled flow rate and the flow path includes a string of tubulars extending from the well surface to the formation, the at least one nozzle located in the string of tubulars, proximate the formation;

at least one opening formed along the string of tubulars proximate the formation, the at least one nozzle connected to the at least one opening, wherein the at least one opening includes a pocket;

a wall between an interior of the tubing and the at least one opening, the wall having at least one aperture formed therein, wherein the number of apertures in the wall between the tubing and the pocket is variable and selectable.

60. (Previously Presented) The apparatus of claim 59, further including an intermediate sleeve member disposable in the tubular string adjacent the apertures in the wall, the intermediate sleeve member having apertures alignable with the apertures in the wall.

61. (Previously Presented) The apparatus of claim 60, wherein the steam is saturated steam.

62. (Previously Presented) The apparatus of claim 61, wherein the steam includes a component of water and a component of vapor.

63. (Previously Presented) The apparatus of claim 60, wherein the apertures in the sleeve are constructed and arranged to permit steam to pass from the tubing to the pocket while maintaining a predetermined ratio of water and vapor.

64. (Previously Presented) The apparatus of claim 63, wherein the apertures in the wall between the tubing and the pocket are substantially perpendicular to a longitudinal axis of the tubing.

65. (Previously Presented) The apparatus of claim 64, wherein the flow of fluid through the nozzle is approximately parallel to the longitudinal axis of the tubing.

66. (Previously Presented) An apparatus for injecting steam into a lateral wellbore comprising:
a tubular string;
at least one pocket formed circumferentially around the tubular string;
at least one nozzle disposed on the tubular string, the at least one nozzle including a throat portion and a diffuser portion;
a plurality of apertures disposed circumferentially around the tubular string to provide fluid communication between an inner diameter of the tubular string and the at least one pocket; and
at least one sleeve member disposable in the tubular string adjacent the plurality of apertures, wherein the at least one sleeve member comprises a plurality of apertures disposed circumferentially therearound.

67. (Previously Presented) The apparatus of claim 66, wherein the plurality of apertures in the at least one sleeve member are alignable with the plurality of apertures in the tubular string to permit steam to flow from the tubular string to the at least one pocket to maintain a predetermined ratio of water and vapor injected into a geological formation through each of at least two nozzles.

68. (Previously Presented) The apparatus of claim 66, further comprising at least one obstructing member disposed on the tubular string across from the at least one nozzle.

69. (Previously Presented) The apparatus of claim 68, wherein the at least one obstructing member prevents a portion of the steam from flowing in a direction in which the steam is dispensed from the at least one nozzle.

70. (Currently Amended) A method of injecting steam into a formation, the method comprising:

introducing the steam into a wellbore via a string of tubing, the tubing having a first injection point axially spaced from a second injection point; and

regulating the steam introduced at each injection point by varying a nozzle arrangement at the injection point, wherein the nozzle arrangement includes a nozzle having a throat portion and a diffuser portion and wherein the varying of the nozzle arrangement includes controlling a water and vapor ratio by permitting the steam to pass through a selected number of apertures formed in the tubing.

71. (Previously Presented) The method of claim 70, wherein the regulation of steam is based upon the location of the injection point relative to a steam generator.

72. (Previously Presented) The method of claim 70, wherein the steam flowing through the nozzle is at a critical flow rate.

73. (Previously Presented) The method of claim 72, wherein the critical flow rate is maintained when an annulus/tubing ratio is greater than about 0.56.

74. (Previously Presented) The method of claim 70, wherein the steam is introduced at a pressure adequate to overcome a natural pressure and impermeability present in a zone of interest.

75. (Previously Presented) The method of claim 70, further including causing a flow of the steam through the tubing whereby a water component of the steam travels in an annular fashion along an inner wall of the tubing.

76. (Previously Presented) The method of claim 70, further including removing and replacing the nozzle with a second nozzle.

77. (Previously Presented) The method of claim 70, wherein the varying of the nozzle arrangement includes sizing the throat diameter for the injection point.

78. (Cancelled)